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Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Quilty BJ, Clifford S, Hellewell J, et al. Quarantine and testing strategies in contact tracing for SARS-CoV-2: a modelling study. *Lancet Public Health* 2021; published online Jan 20. https://doi.org/10.1016/S2468-2667(20)30308-X.

Supplementary appendix

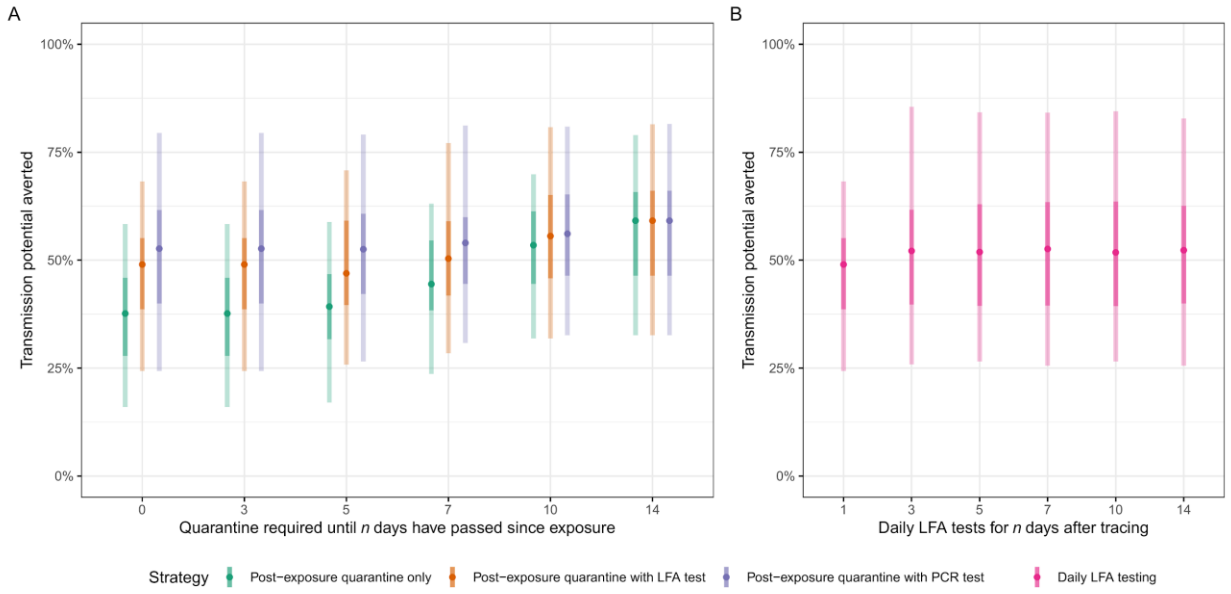

Figure S1: **Transmission potential averted** (sum of days of secondary cases' infectious periods spent in quarantine or self-isolation/ sum of days of secondary cases' infectious periods) for each strategy with quarantine-based strategies (quarantine required from time of tracing until *n* days have passed since exposure, either with or without a test on the final day) in **A** and daily testing strategies (daily lateral-flow antigen tests without quarantine for *n* days from tracing, isolating only upon a positive test result) in **B**. Quarantine and self-isolation adherence assumed to be 50% and 67%, respectively. The delay from index case's positive test until the tracing of secondary cases is assumed to be 3 days (current average). Central bars indicate the median ratio for a given strategy, with 95% and 50% uncertainty intervals indicated by light and dark shaded bars, respectively.

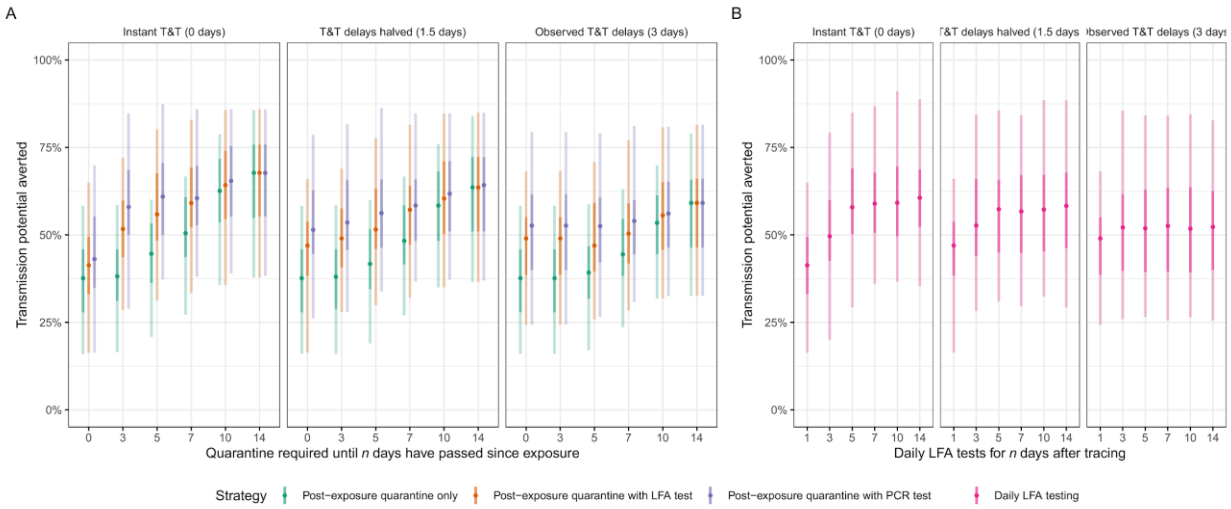

Figure S2: **Transmission potential averted with reduced test and trace delays** (sum of days of secondary cases' infectious periods spent in quarantine or self-isolation/ sum of days of secondary cases' infectious periods) for each strategy with quarantine-based strategies (quarantine required from time of tracing until *n* days have passed since exposure, either with or without a test on the final day) in **A** and daily testing strategies (daily lateral-flow antigen tests without quarantine for *n* days from tracing, isolating only upon a positive test result) in **B**. Quarantine and self-isolation adherence assumed to be 50% and 67%, respectively. The delay from index case's positive test until the tracing of secondary cases is assumed to be 3 days (current average), with sensitivity analysis with halved delays or instant Test & Trace. Central bars indicate the median ratio for a given strategy, with 95% and 50% uncertainty intervals indicated by light and dark shaded bars, respectively.

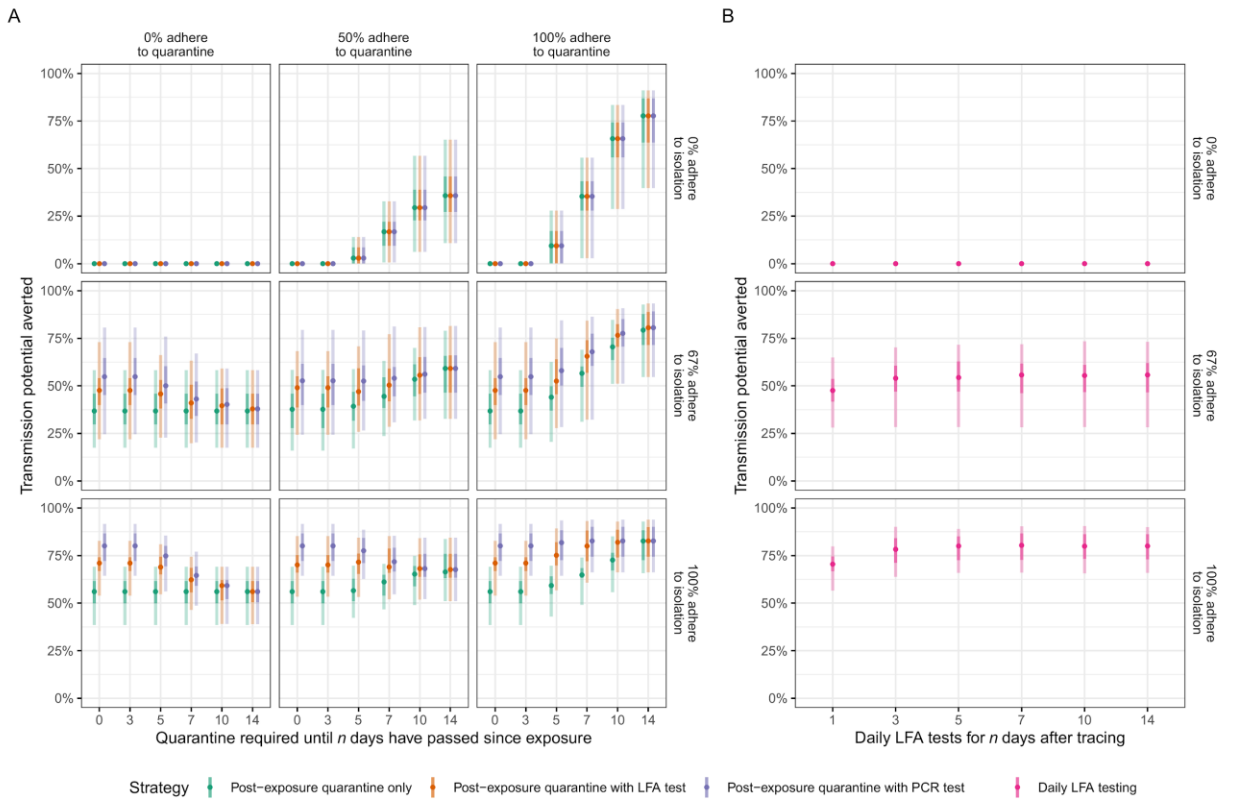

Figure S3: **Transmission potential averted with reduced or increased adherence** (sum of days of secondary cases' infectious periods spent in quarantine or self-isolation/ sum of days of secondary cases' infectious periods) for each strategy with quarantine-based strategies (quarantine required from time of tracing until *n* days have passed since exposure, either with or without a test on the final day) in **A** and daily testing strategies (daily lateral-flow antigen tests without quarantine for *n* days from tracing, isolating only upon a positive test result) in **B**. Quarantine and self-isolation adherence assumed to be 50% and 67%, respectively in the base case, with sensitivity analysis values of 0% and 100% for each. The delay from index case's positive test until the tracing of secondary cases is assumed to be 3 days (current average). Central bars indicate the median ratio for a given strategy, with 95% and 50% uncertainty intervals indicated by light and dark shaded bars, respectively.

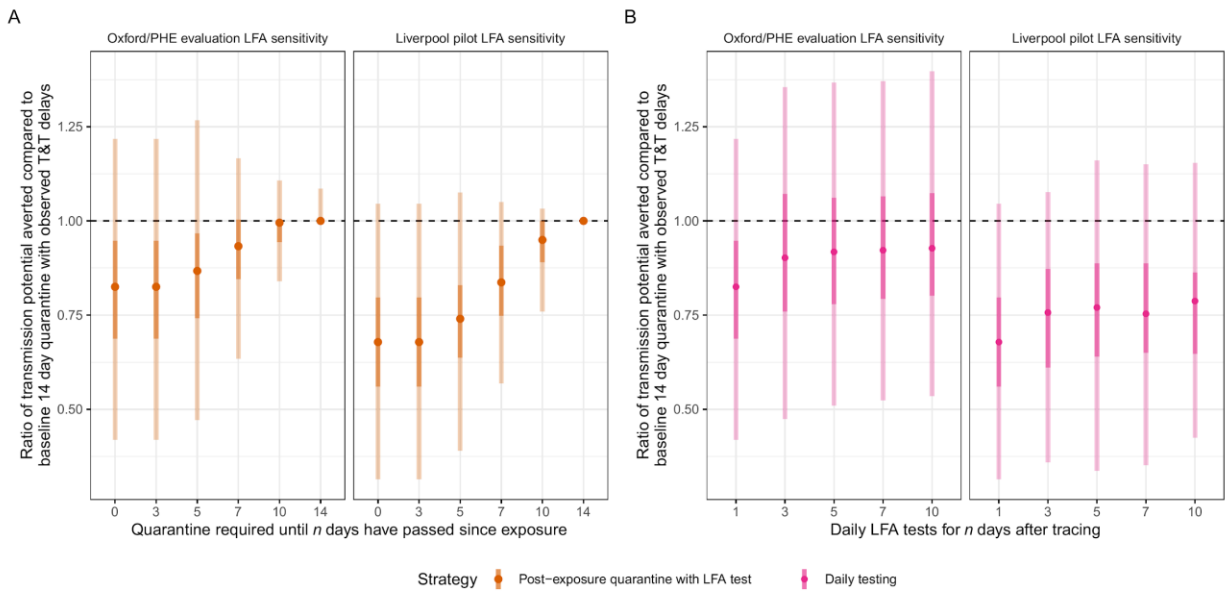

Figure S4: **Ratio of transmission potential averted with values of sensitivity reported in the Liverpool mass asymptomatic testing trial** (sum of days of secondary cases' infectious periods spent in quarantine or self-isolation/ sum of days of secondary cases' infectious periods) for each strategy vs the baseline of 14 days quarantine with no testing, with quarantine-based strategies (quarantine required from time of tracing until *n* days have passed since exposure, either with or without a test on the final day) in **A** and daily testing strategies (daily lateral-flow antigen tests without quarantine for *n* days from tracing, isolating only upon a positive test result) in **B**. Quarantine and self-isolation adherence assumed to be 50% and 67%, respectively, in the baseline scenario. The delay from index case's positive test until the tracing of secondary cases is assumed to be 3 days (current average). Central bars indicate the median ratio for a given strategy, with 95% and 50% uncertainty intervals indicated by light and dark shaded bars, respectively.

Lateral flow antigen (LFA) sensitivity

As a sensitivity analysis for the performance of lateral-flow antigen testing, we use the interim reported results of the Liverpool Community Testing pilot which used the Innova lateral flow antigen test to test asymptomatic individuals in real-world, self-administered use. The mean sensitivities reported by Ct band were 5.3% for 30-35, 8.3% for 25-30, 54.5% for 20-25, and 82.4% for <20, lower than that reported by University of Oxford/Public Health England in their evaluation. We find that this results in a lower effect estimate (Figure S4), however, the uncertainty intervals for daily testing continue to cross the null when compared to the 14-day quarantine period. It should be noted that the difference in apparent sensitivity may be influenced by variation in the PCR assay used and therefore cycle threshold measured by different labs; in the Liverpool trial, the median Ct in asymptomatics was 22.1[1] whereas multiple studies report central estimates of Ct in asymptomatic individuals as being in the range 27-35[2–8]. This 5-10 Ct shift may explain the lower sensitivity of lateral flow tests reported in Liverpool. In order to address this uncertainty, protocols should be clearly reported to enable standardisation and comparison of the viral load of individuals, preferably in SI units. Alternatively, a component of the lower sensitivity observed in the Liverpool Pilot may be attributable to inferior sampling practice by untrained members of the public in real-world conditions.

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